

New R.A.C.E.S. director

The new year brings with it changes in the leadership of the Johnson County RACES organization. Joe Vergara, KA9ZPA, has been named RACES director by Sam Williams, County Emergency Management Director. Joe succeeds Bill Brinkman, KA9ZMU. Bill will continue with RACES in a support role and will also teach the spring novice class with Dave KF9SZ.

According to Joe one of the first projects this spring will be to move the packet radio antenna to a higher location on the county radio tower. This will make the RACES EOC packet BBS a much higher profile machine. A six meter link will also be added providing expanded coverage for the entire state RACES packet network.

With the addition of a six meter rig the Johnson County amateur radio emergency operations communications room will have the capability of transmitting on all of the frequencies used during local and national disasters. If you are interested in joining RACES, contact Joe Vergara, at 862-3394.

Growth in Ham radio

May not be as great as expected!

Growth in Amateur Radio may not be anywhere near as great as the numbers currently show. This is because there have been few names purged from the FCC's database in over a decade, and there is really no way right now to know the total number of hams who are alive and taking an active part in the hobby.

But come January of 1994 some real idea of just how many hams there are will begin to show up. This, as the first of the ten year ham licenses begin to expire and we see just how many hams renew.

By way of background, all licenses issued or renewed during the period of January 1984 to December 1988 were ten year term tickets. As a result there were relatively few renewals filed from January 1989 to the end of this year. There were also no renewals made to existing five year licenses after 1989. All licenses issued from January 1984 to December of 1988 were simply given a bonus of a five year extension. So, the big question for 1994 is what is the real number of living, licensed and active hams?

Some insight may come from figures compiled by Fred Maia of the W5YI VEC. Fred figures that at least 4,400 renewal applications should arrive at the FCC's Gettysburg, Pennsylvania post box in January. Most trend watchers expect the number to be around half of that and believe that a downward trend will continue as the inactive and deceased hams are weeded out of the FCC database.

The Commission says that it is planning to introduce a new and simple mail-back renewal card. In fact the commission had planned to introduce the card in January, but it now does not look like it will be available until later in the year. The theory is that anyone who does not renew using such an easy system is either no longer among the living or has decided to drop out of ham radio, permanently.

Sometime in March the numbers for January and February should be announced.

Britain code free?

British amateurs are opposed to a code-free amateur license with HF privileges, an informal survey has shown. The current U.K. Class B license, with privileges only on 50 MHz and above, is code-free; the Class A (HF) license requires a 12 WPM Morse code exam.

In 1992 the British Radiocommunications Agency asked the Radio Society of Great Britain to conduct a survey to get opinions on the subject of a code-free license for HF. Out of 60,000 U.K. licensed amateurs 1413 responded. By a 2-to-1 margin the respondents opposed a code-free HF license.

The RSGB said that with the worldwide amateur community expanding at some 7 percent per year, some method is needed to restrict access to the HF bands, which already are very crowded.

Current International Telecommunication Union regulations requiring a Morse exam for an HF amateur license would have to be changed through a petition process from individual countries, the article said, although it also noted that Japan has a code-free license that allows limited amateur privileges below 30 MHz (10 watts output and excluding 20 and 17 meters.)

The RSGB noted that Region 1 of the International Amateur Radio Union recently supported keeping a Morse code requirement for HF licenses. The RSGB said it currently agrees with that opinion "but recognizes that the situation may change in the next 5 or ten years. *****"

I'm glad that I'm American, I'm glad that I am free!

But how I wish I were a dog
And congress were a tree!

Home for the holidays



It never ceases to amaze me how comforting my little HT can be during bad weather. And Christmas this year was no different. Like many of us I usually travel out of state to visit my family for Christmas.

It's a short, one-day, two and a half hour trip to Kettering, Ohio and back. No problem, except for the 140 miles of ice and snow. As our family of four headed for the I-465 and US 31 interchange my brother, Don, KB8PSL, called me from his home in Kettering. He was using the 145.19 wide area repeater.

Don said he was sitting next to his fireplace, feet propped up, watching the snow come down while talking to me on his new HT. Fine business. I was in Hoosierland slip sliding my way around I-465. But, hey, at least I knew what the road conditions were like in Ohio. This wouldn't be the first time we braved the elements to drive home for the holidays.

One lane of I-465 was plowed and looked pretty good. One passable lane out of three meant the highway department was beginning to make some progress.

Too bad those two abandoned cars in the median we passed going around I-465 didn't wait for the road to be cleared. Oops!. Just passed three more cars that just met by accident in the west bound lane of I-70 near Post

road. "Break, Break 76!" Two hams talking on the 146.76 machine allowed me to call the State Police. Glad I had my radio. Help was on the way moments later.

The journey across I-70 was made cautiously. It gave us comfort to have my brother check-in with us every twenty minutes via 2-meter radio. Despite the slower speeds our trip seemed just about normal. The kids usually like to play games when we travel. This time we all counted the cars and trucks off the road in the ditch. But hey, I've got front wheel drive! No problem. Richmond is just 8 miles away.

"FLAME OUT!, FLAME OUT!" The U-haul in front of me is doing 360's down the highway. I expected him and the Camaro in front of me to crash and burn. Phew...No contact! After a short pause, the U-haul straightened up and got back into the flow of holiday traffic. An ice covered bridge caught us all by surprise. Man, I need a coffee break!

Mile marker 155.. Apparently several other motorists escaped that bridge but were surprised by another icy patch of highway a mile further down the road. Another call to a local Richmond repeater brought more help. After more than two hours we finally made it into Ohio. Egg-nog is just an hour away! The Buckeye-state roads are wet but passable. Fortunately, there were only brief periods of light snow showers and no more surprises.

Our trip took us almost ninety minutes longer than usual. We had a wonderful time eating, talking and playing computers.

Don has a 486 with all the bells and whistles. We even found time to exchange gifts. Computer discs, of course.

During the drive back to Indiana Don kept track of our progress across I-70. DOT had apparently eaten Christmas dinner and then decided to clear the highways. The roads were almost dry. We made it back to central Indiana just in time for the Sunday night net on the '835. It was like having a light in the window, awaiting our return.

Despite a few anxious moments, it was good going home for Christmas. Thank goodness I had my ham radio to comfort me along the way. I'll never leave home without it. Best wishes for the new year. - NT9J.

Ham goes for the Gold!

Emmy winning TV Producer Rich Moseson, NW2L, may be on his way to another major award. This, with word that his video titled "Ham Radio Horizons" produced for CQ Communications Inc, has been named as a finalist in the New York Festival's International Non-Broadcast Media Competition for 1993.

Moseson's "Ham Radio Horizons" is designed to bring the world of ham radio to life for hams and non hams alike. It was chosen from a field of almost fourteen hundred entries in the competition's non-broadcast categories. Winners of the festival's Gold, Silver and Bronze medals will be announced in January 1994.

How to be a lid!



From our earliest days in Ham radio we have heard the term "LID". This was an old ham term coined to label annoying operators on the air waves. The following article is a humorous attempt to help us avoid being called a "LID".

"How to sound like a LID in one easy lesson:" by VE7LID (actual callsign).

Step One: Use as many Q signals as possible. Yes, I know they were invented solely for CW and are totally inappropriate for 2 meter FM, but they're fun and entertaining. They keep people guessing as to what you really meant. I.E. "I'm going to QSY to the Phone". Can you really change frequency to the phone? QSL used to mean "I am acknowledging receipt", but now it appears to mean "yes" or "OK". Also, it's best to use OK and QSL together. Redundancy is the better part of Lid-dom.

Step Two: Never laugh, when you can say "hi hi". No one will ever know you aren't a long time CW ragchewer if you don't tell them. They'll think you've been on since the days of Marconi.

Step Three: Utilize an alternative vocabulary. Use words like "destinated" and "negatory". It's OK to make up your own words

here. Yea Bill, I phoned zaphonix occasionally myself."

Step Four: Always say "XX4XXX" (insert your own call) "for I.D." As mentioned in Step One, anything that creates redundancy is always strongly encouraged. That's why we have the Redundancy Department. (Please note that you can follow your call with "for identification purposes" instead of "for I.D." While taking longer to say, it is worth more lid-points.)

Step Five: The better the copy on 2 meter FM, the more you should phonetically spell your name, especially if it is a short and/or common one. I.E. "My name is Al...Alpha Lima" or "Jack...Juliatt Alpha Charlie Kilo." If at all possible, make up unintelligible phonetics. "My name is Bob...Billibong Oregano Bumperpool."

Step Six: Always give the calls of yourself and everyone who is (or has been) in the group, whether they are still there or not. While this has been unnecessary for years, it is still a wonderful memory test.

Step Seven: If someone asks for a break, always finish your turn, talking as long as possible before turning it over. Whenever possible, pass it around a few times first. This will discourage the breaker and, if it is an emergency, will encourage him to switch to another repeater and not bother you.

Step Eight: Always ask involved questions of the person who is trying to sign out. Never let him get by with a yes or no answer. Make it

a question that will take a long time to answer.

Step Nine: The less you know about a subject, the more you should speculate about it on the air. The amount of time spent on your speculations should be inversely proportional to your knowledge of the subject.

Step Ten: If someone on the repeater is causing interference you should talk about that person at great length, making sure to comment on at least 4 out of 6 of the following: (1) His mental state; (2) His family; (3) His intelligence or lack of same; (4) His sexual preference; (5) His relationship to small animals; (6) His other methods of self entertainment.

Step Eleven: If you hear two amateurs start a conversation on the repeater, wait until they are 20 seconds into their contact, and then break-in to use the patch. Make sure that it's only a simple routine phone call. It's also very important that you run the auto-patch for the full three minutes. This way, once the two re-establish contact, they won't even remember what they were talking about.

Step Twelve: You hear someone on the repeater giving directions to a visiting amateur. Even if the directions are good, make sure you break-in with your own "alternate route but better way to get there" version.



Vanity calls

On December 13th the FCC proposed that amateurs be able to choose their own call signs, once a new automated processing system is in place at the commission's private bureau.

Under the proposed system, amateurs wishing to apply for an available call sign would be required to file a form and pay a fee. Trustees of club and military recreation stations also would be eligible for the new program.

The FCC said that at the present time call sign selection by new licensees was not feasible, but left the door open for that possibility in the future.

The FCC also said that the new PRB computer might eventually allow amateurs to check for themselves the availability of call signs, and that the new system might be used to allow electronic filing of applications, making the process easier for applicant and FCC alike.

The "Vanity" call sign plan was unanimously approved by the four FCC commissioners. The text of the notice of proposed rule making is not yet available but is expected to be issued shortly.

Phone hackers

A recent Motorola ad is aimed at lawbreakers known in the industry as "cellular phone hackers" who can bill calls to other numbers by breaking cellular codes. Books are actually available on how to do this and are advertised in some magazines.

According to the New York Times, "clone phones are available for as little as a few hundred

dollars." The Times also said that devices capable of intercepting cellular phone codes can be bought by mail order or "for even less money can be fashioned out of more commonly available gadgetry."

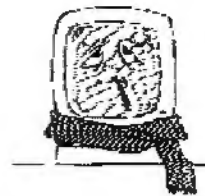
VE probe update

Still with regulatory issues, we have an update on the ongoing government probe of several Volunteer Examiners in the Los Angeles area. Word is that some of the VE's under investigation may still be giving ham radio tests even though they have been suspended by both the ARRL and W5YI VEC's!

This is because the FCC apparently never bothered to inform the nation's other VEC's of the names and call signs of the suspect examiners. The word on the street is that some of the suspended examiners are simply sliding over into another of their many accreditations and are continuing to administer examinations to prospective newcomers and upgrades.

But this may soon change with word that the Westlink Report ham radio newsletter is calling on the FCC to make public the names of those hams it suspects to be in violation of the Part 97 rules regarding the administration of amateur radio examinations.

The newsletter also indicates that if the Commission fails to take such a step voluntarily, that it may find a way to publish the information. This would be a way of letting the ham radio community know who the suspected bad VE's really are.



New computer viruses!

***Oprah Winfrey Virus: Your 200 MB drive suddenly shrinks to 80 MB, then slowly expands back to 200.

***AT&T Virus: Every three minutes it tells you what great service you are getting.

***MCI Virus: Every three minutes it reminds you that you're paying too much for the AT&T virus.

***Ross Perot Virus: Activates every component in your system, just before the whole thing quits.

***Mario Cuomo Virus: Burps, gurgles, and talks a good line; but in the end, your computer refuses to run.

***Ted Turner Virus: Colorizes your monochrome monitor.

***Adam and Eve Virus: Takes bytes out of your Macintosh.

***Airline Virus: If you're in Dallas, it sends your data to Singapore.

***PBS Virus: Stops whatever program is running on your PC every few minutes to ask for money.

***Ollie North Virus: Turns your printer into a document shredder.

***Kevorkian Virus: Enables your computer to pull its own plug.

***Imelda Marcos Virus: Sings you a song on boot-up, then subtracts money from your Quicken account and spends it purchasing expensive shoes through Prodigy.

***Star Trek Virus: Invades your system in places no virus has gone before. ***

A user's guide to repeaters

An article in 3 parts courtesy of "The Tri-State's Wide Area Repeater System"

What is a repeater?

A repeater is an automatically controlled transmitter and receiver that simply transmits what the receiver hears. By placing repeaters at sites with high elevation and antennas atop large towers, workable coverage is greatly increased.

What is a courtesy tone?

A courtesy tone is a short tone or series of tones that sound over the transmitter of a repeater when someone unkeys a radio. So, when you let up off the mike, you hear a tone. This tone serves three purposes: 1) to let the other people on frequency know you are finished talking; 2) to let the repeater timer reset (more on this later); and 3) to give a one second pause for anyone who might need to break into a conversation for emergency purposes.

More advanced repeater systems will provide information by courtesy tone. Some repeaters will give a tone that does up or down in pitch according to how well your signal is to the repeater. For instance, a low tone may mean that the repeater is hearing you S1, while a high tone may mean S9.

More frequently, a morse code character is used as a courtesy tone to inform you as to which receiver of the repeater you are using. For instance, a "P" may mean you are using the Petersburg receiver, while an "E" may mean you're using the Evansville receiver.

What is a remote receiver?

A remote receiver system is another way of extending a repeater's range. A receiver tuned to the same frequency as the main repeater input may be placed several miles away from the repeater. This "remote receiver" then retransmits the signals it hears, just like a repeater. But, the "remote receiver" transmits the signal on a different frequency. This is known as auxiliary operation, and is commonly done on 440 MHz.

At the repeater site, several 440 receivers are used to hear all of the remote receivers. A device called a voter listens to all the signals, and chooses the one with the best signal-to-noise ratio, thus picking the best sounding signal. That one signal is then sent to the repeater. So, essentially a repeater with remote receivers may have six receivers tied to one transmitter. But, the voter allows only the strongest signal to be placed on the transmitter.

What is a repeater timer?

Timers are used on repeaters in the event that someone may accidentally keep their radio keyed for an extended period of time. Usually this happens if a microphone gets caught in between the seats in a car or someone sits atop a microphone. After a certain amount of time that is determined by the owner(s) of the repeater, the repeater will turn itself off until the signal disappears. This keeps the repeater from overheating.

Most repeaters have a timer of three to five minutes. So, if you talk for more than three minutes at a time, the repeater may not be there

when you unkey! The repeater timer resets when you hear a courtesy tone. Then you have another three to five minutes of time to chat! (This timer is also good for keeping long-winded people in line and give someone else a chance to talk!!!)

Part 2 will appear in the February Issue of Spark-Gap. Our thanks to Charlie Sears N9MEW for the entire article.

Tid bits.....

**** Tom Daugherty won first place at the Toastmasters Area 2 Evaluation contest at Southport Library in Indianapolis. He is a member of the Greenwood Toastmasters Club. Tom, KF9NF is also a member of MARC and has been speaking on Amateur Radio! Thanks, Tom!

**** Larry, N9MKR managed to make it home from Kansas to celebrate Christmas with his mother and friends. He braved some poor road conditions for the trip!

**** We had a great turnout at the December meeting to hear Joe, KA9ZPA discuss his Puerto Rican visit to the world's largest radio telescope! The room was full! Was it the free doughnuts or the colorful video presentation?

Newest members to the club

The following amateurs have joined MARC since the last newsletter. Please welcome:

George Burton N9TVN, T, Whiteland; Mary Shelly N9VKJ, T, Free-town; Stuart Hudson KA9ENO, T, New Whiteland; James Smith WV9W, E, Columbus; and Brian Smith WW9A, E, Columbus.

We hope you can all attend the meeting this Saturday and meet our members!

New Jersey attacks Amateur Radio!

Proposal could seriously cripple our hobby!

New Jersey, the state that two years ago tried to jail hams who had rigs in their cars and more recently tried to force Radio Shack to stop selling scanners with cellular coverage now wants to put a tax on every radio transmitter in the state!

The New Jersey Department of Environmental Protection and Energy is proposing a fee on owners of almost all transmitters that are both commercially and privately owned.

The proposed rule will require the owners of any source of radio frequency and microwave radiation between the frequencies of 300 KHz and 100 GHz and which have the potential of exposing either workers or the general public to radiation levels in excess of the regulatory limits to register those sources with the Department within 60 calendar days after the effective date of this rule.

The owners of all units that are subject to this rule shall be assessed an initial registration fee and will be required to provide technical information on each piece of equipment to the Department.

After the first year of the program, the owners of registered units will be assessed an annual renewal fee. The amounts of the proposed fee are based on the services to be performed by the

Department. As a reference, the median fee for commercial users will be approximately \$500 per antenna per year if this proposal is passed.

Radio frequency sources definitely falling under the proposed legislation include AM and FM radio stations, television stations, commercial microwave ovens, cellular telephone systems, radar installations, microwave point-to-point links, ground-to-satellite telecommunications links, and other communications services.

Radio frequency and microwave sources are also widely used in industrial heating and sealing operations and will be included as well. Although fees are not yet outlined for Amateur Stations, ham radio is mentioned in several sections of the proposal as being a significant source of radio frequency radiation that the state says poses health risks to the general public.

A hearing to discuss the rule will be held on January 11th in the Department's Public Hearing Room in Trenton, New Jersey. The Department will accept comments on the proposed regulations until January 20th.

Those outside New Jersey aren't out of the clear on this issue. If this proposal passes into law, it could be justification for other

states to take similar action. It might even lead to a national ruling on radio frequency radiation that could seriously damage the ability of Amateur Radio to fulfill the basis and purpose that it was created to serve!

Hams want

11 meter frequency

If you are not on packet then you may not be aware that a growing number of hams around the nation are sounding a call to arms. A call with the aim of taking part of 11 meters back from Citizens Radio and turning it over to Novice and no-code Technician class hams.

No, its not a joke! In fact, those involved seem very serious and are looking to do it the right way. The political way by petitioning the FCC to make the change.

The debate on this issue started a few weeks ago on packet when Tom Saluti, N1KIO of New Durham New Hampshire posted an All United States bulletin dealing with the subject. Tom's idea has gained a lot of support!

In his posting, N1KIO called the 11 meter band — more accurately the 10 1/2 meter Freeband as being — and we quote — a wasteland that even the government can't use. This Tom says is

because operators have taken it over from 26.000 to 28.000 MHz and sometimes even make excursions into the 10 meter ham band.

He went on to note that with the FCC having taken away some frequencies from Amateur Radio that it might be time for them to give some spectrum back. This by abandoning their own efforts to handle the 10 1/2 meter problem and turn 27.500 to 28.000 over to the Amateur Radio service.

He says that radio amateurs can easily solve the mess by permitting Novices and Techs to run CW and data from 27.500 to 27.700 and voice operation from 27.700 to 28.000 MHz.

Since its posting, the N1KIO bulletin has been highly controversial. Not over the idea of running the illegal operators off of 11 meters and getting it reassigned as a ham radio band. Almost every commenter wants to see that happen. The problem seems to be on how to do it.

Many hams have a high level animosity toward the Freeband illegals but some question how to get the FCC to take the request seriously.

One response gaining a lot of support suggests that a petition be circulated by packet radio where signatures and call signs could be added. Then, after a few months a final print-out can be sent to the Private Radio Bureau as a rule making request.

Regardless of the packet discussion, a fire is being fanned by a desire of no-code hams to

have access to the high frequency bands! It is growing, and the illegal operators on 10 1/2 meters may soon find hot cinders falling in their self-proclaimed Freeband as radio amateurs take a political route to oust the current crop of illegal operators and open 10 1/2 meters to ham radio!

Original Marconi kites discovered!

Joe Chamberlin, VE3ABG reports via packet that some of the original kites used in the early 1900's by radio pioneer Guglielmo Marconi have been found. The kites were discovered during a recent Marconi plant clean-up in Montreal.

Plans are to donate some of the kites to the Marconi Museum in St. John's, Newfoundland. This is where early trans-Atlantic transmissions took place from Signal Hill.

VE3ABG also says that contrary to rumors going around, the Marconi company officials do not plan on offering them up for public auction.



Two handed code..

In his book *Waterfront and the Wireless*, Dick Johnstone relates how he and a buddy were determined to become operators at the old KPH Marconi station shortly after WW1.

KPH operators were required to use a landline telegraph circuit as well as the wireless facilities. Johnstone and his friend were already proficient in the International Code used on wireless, so they began to teach each other the American Morse Code used on landlines.

In six months they mastered the additional code at fast operating speeds and also learned to copy on a mill (typewriter) and to write with a pencil with either hand. They landed the KPH jobs!

Johnstone does not seem to have recorded it but I've been told that he was able to send equally well with either hand. In fact, he developed his ambidexterity to the point he could send a message in American Morse with one hand while sending in International Morse with the other.

This would seem incredible if it were not for the various stage demonstrations we've seen where, for example, an entertainer writes poetry on a blackboard with one hand while recording and adding a long column of figures dictated by someone at random in the audience.

Of course, all Morse telegraphers developed some of this kind of skill (sending with one hand while writing number, time sent, etc. on the message blank with the other hand) no doubt after much diligent practice!

from the June 93 "Morsum Magnificat" and ARNS.

Don't miss the soldering demonstration Saturday at the club meeting!



TIP TO NEW COWBOYS:
Never squat with your spurs on!

***Some people say what they think; others have friends.

***Children are biased. When I take the children out all they say is, "Bias this and bias that"

***NOSTALGIA: It's not what it used to be.

***FROM ACTUAL NEWSPAPER ADS:

For Sale: antique desk suitable for lady with thick legs and large drawers.

Dinner special: turkey \$9.75; chicken, \$8.75; children, \$5.00

Now is the time to have your ears pierced and get an extra pair to take home too!

Tired of cleaning yourself? Let us do it!

Dog for sale: eats anything; fond of children.

Stock up and save. Limit: one.

Man, honest: will take anything.

We will oil your sewing machine and adjust tension in your home for just \$10.

Wanted: part-time married woman to work in craft shop.

Man wanted, to work in dynamite factory. Must be willing to travel.

*** Motorist stopped for speeding, "But officer, I can explain!"

"Quiet," snapped the officer. "I'm going to let you cool off in jail until the chief gets back!"

"But officer, I just wanted to say--"

"I said quiet! Your're going to jail!"

Later the officer looked in on his prisoner and said, "Lucky for you the chief's at his daughter's wedding. He'll be in a good mood when he gets back and sees you."

"Don't count on it," answered the prisoner. "I'm the groom!"

***Why do we drive on a parkway and park on a driveway?

***Why did Kamikazi pilots wear helmets?

***Why is the third hand on the watch called the 'second' hand?

***If blind people wear dark glasses, why don't deaf people wear earmuffs?

***I thought I was wrong but I was mistaken!

A little mixed up

Just a line to say I'm living,
That I'm not among the dead.
That I'm getting more forgetful,
And mixed up inside my head.

I've gotten used to my arthritis,
To my dentures, I'm resigned.
I can manage my bifocals,
But I really miss my mind!

For sometimes I can't remember,
When I'm standing near the stair,
If I'm going up for something or...
I've just come down from there.

Often before the refrigerator,
My mind is filled with doubt,
Have I just put some food away..,
or have I come to take some out?

There's times when it is dark,
With my nightcap on my head,
I don't know if I'm retiring,
Or just getting out of bed!

So remember that I love you,
And wish that you were here,
And now it's nearly mail time,
so I'll say "Good-bye, my dear,"

As I stand beside the mail box,
With my face so very red, In-
stead of mailing you my letter... I
have opened it instead!



BENS WEATHER TIPS

By Ben Woods Channel 8 TV

For anyone traveling about during these cold winter days, there are some items you want to have with you in addition to your hand-held radio. In case your vehicle breaks down, you'll want to have some heavy blankets, a flashlight, non-perishable food, and some water.

Jumper cables are a good idea too. Stay with your vehicle and wait for help to arrive. Use your car's heater sparingly (if it works at all) and bounce on the car seats to stay warm.

Bitter wind chills can be especially dangerous. Windchills colder than 20 degrees below zero can cause frost-bite on exposed flesh in only a minute or two. An actual temperature of 18 degrees and a 30 mph wind gives us a -21 windchill. A windchill of -40 would be reached if the temperature got down to 3 degrees with a 25 mph wind.

Keep in mind windchills are indicative of the cooling power of the conditions of the atmosphere. Water will not freeze with windchills below 32 degrees nor do windchills adversely affect inanimate objects.

As we begin 1994, I thought last year was worth one final look back. Highlights for 1993 in Indianapolis include: 50.76 inches of rainfall, which is well above the normal of 39.94". Also, the autumn (September through November) was especially wet with 16.24", making it the wettest autumn since 1921 and the 4th wettest on record.

When all was said and done, the yearly average temperature in Indianapolis was 52.1 degrees (compared to the normal of 52.3 degrees). The hottest day was 94 degrees on July 28th and the coldest day was a chilly -9 degrees on February 18th.

Looking ahead, much of the midwestern U.S. is expected to be colder than normal and precipitation will be near normal. Of course, 30 day forecasts of this kind are only about 53 percent accurate.

Ben Woods WISH-TV Meteorologist

See you at the meeting saturday?

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Central Indiana Hams!

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AMATEUR RADIO CLASS!

If you are interested in becoming an Amateur Radio operator (Ham) you are invited to attend our weekly instruction classes starting on February 14th at the Johnson County Law Enforcement bldg. in Franklin.

The class is free but you will need to purchase a book. For more information call Bill KA9ZMU at (317) 738-9424

YOU CAN TALK TO THE WORLD!

MARC MEMBERS: You can help us out by clipping the above ad and posting it in your area. Thanks!

MARC

Mid-State Amateur Radio Club

Post Office Box 836 Franklin, In. 46131

Club Repeater: 146.835

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